

AMENDMENTS TO THE DRAWINGS

Please replace the currently pending copy of Figure 2 with a new copy of Figure 2. See Replacement Sheet 1/1, enclosed with the present amendment.

REMARKS

Section 1 of the Action

In section 1 of the Action, the Examiner objects to Figure 2 and requires the elements of Figure 2 to be labeled with descriptive legends. The Applicant has amended Figure 2, enclosed herewith, and submits that the Examiner's objection has been overcome.

Section 3 of the Action

In section 3 of the Action, the Examiner rejects claims 1-4, 7-11, 14-18, and 21 under 35 USC 102(b) as being anticipated by U.S. Pat. No. 6,320,472 to Vanier.

Applicant has amended independent claims 1, 8, and 15 to recite "*a modulation frequency whose n-th harmonic is said atomic frequency, with n being an integer substantially larger than two*" (emphasis added). Support for the amendment can be found at Figure 3 and related portions of the specification, where use of a 23rd harmonic of the modulation frequency is disclosed. See, for example, page 7, lines 10-25 of the application as filed. In particular, upon reading of the specification of the present application, the person skilled in the art will understand that the objects of the present invention can be obtained by use of a harmonic of the modulation frequency that is substantially higher than the second harmonic of the modulation frequency, e.g. a 23rd harmonic. See also *In re Rasmussen*, 650 F.2d 1212, 1214, 211 USPQ 323, 326-27 (CCPA 1981) and *In re Herschler*, 591 F.2d 693, 697, 200 USPQ 711, 714 (CCPA 1979), as also quoted in MPEP 2163.05, 'Addition of Generic Claim.'

Applicant submits that claims 1, 8 and 15 as amended are novel over Vanier. Vanier only discloses use of the first harmonic of the modulation frequency, i.e. a frequency that is half of Vanier's hyperfine resonance frequency. See, for example, col. 5 lines 44-48 of Vanier. Further, should the Examiner be inclined to look at column 7, line 64 through column 8, line 14 of Vanier, the Examiner should note that in that passage Vanier is just

describing the technique used to lock the microwave modulation frequency to the atomic resonance. This has nothing to do with which harmonic Vanier is using.

Therefore, amended claims 1, 8 and 15 are submitted to be patentable over Vanier, together with claims 2-4, 7, 9-11, 14, 16-18 and 21, at least by virtue of their dependence on claims 1, 8 or 15.

Section 4 of the Action

In section 4 of the Action, the Examiner submits that claims 5, 6, 12, 13, 19 and 20 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant thanks the Examiner for the indication of allowability. However, Applicant believes that the above amendments and arguments with reference to independent claims 1, 8 and 15 do not require further amendment of the remaining claims and that all claims define patentable subject matter.

New claims 22 and 23

New claims 22 and 23 are being added to the present application. A fee for two additional dependent claims is enclosed herewith. Support for the new claims can be found in Figure 5 and related portion of the specification, e.g., page 10 of the application as filed.

The Applicant submits that claims 22 and 23 are patentable by virtue of their dependency on claim 1. Further, the Applicant submits that the wording of claims 22 and 23 by themselves defines patentable subject matter. In particular, the Applicant has not been able to find where, in Vanier, the features of claims 22 and 23 are disclosed. Should the Examiner disagree with the Applicant, the Examiner is respectfully requested to show where those features are disclosed.

* * *

In view of the above, reconsideration and allowance of all the claims are respectfully solicited.

The Commissioner is authorized to charge any additional fees, which may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, then the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136 (a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

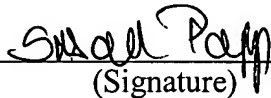
I hereby certify that this correspondence is being deposited with the United States Post Office with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendments, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 on

March 6, 2006

(Date of Transmission)

Susan Papp

(Name of Person Transmitting)


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03/06/06
(Date)

Respectfully submitted,



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Encl.: Replacement Sheet 1/1 (Amended Figure 2)

Calculation Sheet for Excess Claims

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